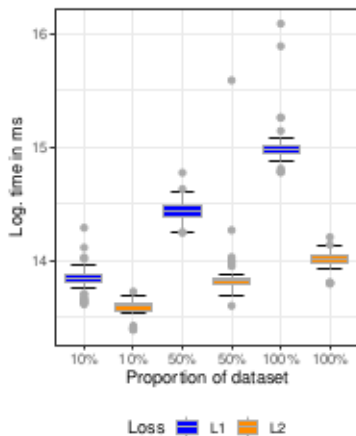


L1 VS L2 – OPTIMIZATION COST

- Real-world weather problem \rightsquigarrow predict mean temperature
- Compare **time** to fit L1 (`quantreg::rq()`) vs L2 (`lm::lm()`) for different dataset proportions (repeat 50 \times)



Loss

	Fitted: <i>L1</i>	Fitted: <i>L2</i>
Total <i>L1</i> loss	8.98×10^4	8.99×10^4
Total <i>L2</i> loss	5.83×10^6	5.81×10^6

Estimated coefficients

x_j	<i>L1</i> : $\hat{\theta}_j$	<i>L2</i> : $\hat{\theta}_j$
Max_temperature	0.553	0.563
Min_temperature	0.441	0.427
Visibility	0.026	0.041
Wind_speed	0.002	0.010
Max_wind_speed	-0.026	-0.039
(Intercept)	-0.380	-0.102

L1 slower to optimize!